

JAPAN

EDICT OF GOVERNMENT

In order to promote public education and public safety, equal justice for all, a better informed citizenry, the rule of law, world trade and world peace, this legal document is hereby made available on a noncommercial basis, as it is the right of all humans to know and speak the laws that govern them.

JIS B 9656 (1990) (English): Design rules for
safety and sanitation of noodle making machinery

安

*The citizens of a nation must
honor the laws of the land.*

Fukuzawa Yukichi

併

BLANK PAGE



BLANK PAGE



JIS

JAPANESE INDUSTRIAL STANDARD

**Design rules for safety and sanitation
of noodle making machinery**

JIS B 9656^{—1990}

Translated and Published

by

Japanese Standards Association

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

JAPANESE INDUSTRIAL STANDARD

J I S

Design rules for safety and sanitation of
noodle making machinery

B 9656-1990

1. Scope

This Japanese Industrial Standard specifies rules for safety and sanitation countermeasures of design, manufacture, installation and operation of noodle making machinery.

Remarks 1. The noodle making machine is the generic name of machinery used in general manufacturing process for noodle making by regulating, mixing, stirring (agitating), rolling, cutting out, forming, steam boiling, boiling up, frying and cooling of wheat powder and other raw materials and includes the lateral mixer, vertical mixer, feeder, noodle band making machine, composite noodle band making machine, continuous rolling machine, regulating quantity cutting-out machine, steaming machine and boiling machine.

2. The applicable Standard to this Standard is shown in the following:

JIS B 9650-General Design Rules for Safety and Sanitation
of Food Processing Machinery

2. Definitions

For the purposes of this Standard main definitions are in accordance with JIS B 9650 and in addition the following definitions apply:

- (1) lateral mixer A machine to make noodle basic substrate by mixing and agitating raw materials of liquid, viscous body, or solid and their mixtures, having lateral axial agitating vanes to be moved in bowl inside by power.
- (2) vertical mixer A machine to make noodle basic substrate by mixing and agitating raw materials of liquid, viscous body, or solid and their mixtures, having vertical axial agitating vanes to be moved in bowl inside by power.
- (3) feeder A machine to feed continuously the kneaded noodle basic substrate to the noodle making machinery.
- (4) noodle band making machine A machine to form the mixed noodle basic substrate to noodle band.
- (5) composite noodle band making machine A machine to form by rolling the noodle basic substrate with combining the noodle band making machine and rolling machine.
- (6) continuous rolling machine A machine to press-roll gradually by passing the noodle band through several step continuous rolls.
- (7) regulating quantity cutting-out machine A machine to cut out the noodle band of specific thickness to noodle line and to regulate the quantity.

- (8) steaming machine A machine to regulate the quality by steaming the cut-out noodle lines.
- (9) boiling machine A machine to regulate the quality by boiling the cut-out noodle lines.

3. Safety and Sanitation Countermeasures in Division of Machine Type

3.1 Lateral Mixer

3.1.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Make the safety guard such structure that it is capable of opening and closing largely as required, and when the opening part has opened the power is shut off automatically.
- (2) In the case of (1), make the structure such that the power stopped once, even the opening part is closed, if the switch is not "closed" newly, does not actuate again
- (3) Make the lateral mixer having automatic or manual bowl overturning apparatus such structure that when the bowl is opened by $\frac{1}{5}$ or more, if the both hands of worker is not used, the stirrer can not start actuation.
- (4) Make the lateral mixer, provide with automatic overturning apparatus such structure that the opening state of bowl is not closed by $\frac{4}{5}$ or more of full open time and for sealing completely the bowl, further the worker operates the electric motor for overturning by using both hands.
- (5) In the case of setting a timer, use a humidity proof timer.
- (6) To the lateral mixer provide with respectively independent electric motor and control apparatus.

Further, provide with an operating switch attached with key so as the other worker not to be able to actuate during checking and cleaning of machine.

- (7) Let the attaching position of electric control operation board be a place where the worker can view sufficiently even the bowl is opened. Other than the stop switch, do not set in double the operating apparatus.
- (8) In the case where, when the cover is opened, there are works to view the state of bowl inside and to mix the additives, attach the safety guard of grid state at the inside of cover, and make the structure such that, when this safety guard is detached, the interlock mechanism so actuates that the agitating vanes do not rotate.
- (9) Attach the emergency stop button at the place nearest to the working range of worker.

3.1.2 Sanitation Countermeasures The sanitation center measures shall be as follows:

- (1) For materials of food contact parts, use in all the stainless steel or that having corrosion resistance equivalent thereto.
- (2) Make such structure that oils do not drop down to the food contact part by oozing out from the bearing part of agitating shaft or the like.
- (3) Make the parts of agitating vanes and agitating shafts such structure that their whole surfaces become effectively clean by ordinary washing method.
- (4) Allow the surface of shaft attached with seal ring to be in accordance with the specification of 4.1 of JIS B 9650.
- (5) Make the structure such that the end parts of agitating vanes contact with the bowl surface so as the contacting area to be smallest and all raw materials can be mixed suitably and further it is not apart more than required distance.
- (6) Make the inlet opening of raw material such suitable size to prevent the leakage of raw material and attach the collar to the inlet opening.

Further, attach the door and cover to the inlet opening of raw material without clearance.

Further, in the case where the door and cover is made hinge type, make the structure easily detachable and attach so as no clearance to be caused.

- (7) Make the wheat powder injection inlet such structure that it is detachable and the parts of injection inlet is also detachable.
- (8) Make the injection inlet of liquid raw material the sanitary structure and further detachable.

Further, make the injection inlet so as not to protrude into the bowl to attach the bowl and cover and do not use the suspending system.

3.2 Vertical Mixer

3.2.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Provide the following safety device to the mixer having vertical agitating shaft.
 - (a) Make the safety guard to be set at the upper part of bowl with enclosing the agitating shaft the such structure it is able to open and close largely as required and when the opening part is opened the power is shut off automatically.

- (b) In the case of (a), make the structure such that the power stopped once, even the opening part is closed, if the switch is not "closed" newly, does not actuate again.
- (2) To the vertical mixer, provide respectively independent electric motor and its control apparatus.

Further, provide the operating switch attached with key so as the other worker not to be able to actuate during checking and cleaning of the machine.

- (3) Let the attaching position of electric control operation board be at the place where the worker can see sufficiently even when the bowl is opened. Other than the stop switch, do not provide the operating apparatus in duplex.
- (4) Attach the emergency stop button at the place nearest to the working range of worker.
- (5) In the case where there are works to view the state of inside of bowl and to mix the additives and the like, fit the safety guard of grid state at the inside of covering lid, and make the structure such that, when this safety guard is detached, the interlock mechanism actuates so as the agitating vanes not to rotate.

3.2.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) For materials of food contacting part use all stainless steel or that having corrosion resistance equivalent thereto.
- (2) Make the structure such that oils do not drop down on the food contact part by oozing out from the bearing part of agitating shaft.
- (3) Make the parts of agitating vanes and agitating shaft such structure that their all surfaces become clean effectively according to the ordinary washing method.
- (4) The surface of shaft attached with the seal ring is in accordance with the specification of 4.1 of JIS B 9650.
- (5) Make the structure such that the end parts of agitating vanes contact with the bowl surface so as the contacting area to be smallest and all raw materials can be mixed suitably and further it is not apart more than the required distance.
- (6) Make the inlet opening of raw material such suitable size to prevent the leakage of raw material and attach the collar to the inlet opening of raw material.

Further, attach the door and cover to the inlet opening of raw material without clearance.

Further, in the case where the door and cover is made hinged type, make the structure easily detachable and attach so as no clearance to be caused.

- (7) Make the wheat powder injection inlet such structure that it is detachable and the parts of injection inlet is also detachable.
- (8) Make the injection inlet of liquid raw material the sanitary structure and further detachable.

Further, make the injection inlet so as not to protrude into the bowl to attach the bowl and cover, and do not use the suspending system.

3.3 Feeder

3.3.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Provide the safety cover at the opening part, and make the structure such that during opening of safety cover, the feed vanes do not rotate according to the interlock mechanism during opening of safety cover.
- (2) Attach the emergency stop button at the place nearest to the working range of worker.
- (3) Attach the safety cover to the driving part so as the hand fingers or cloth of worker not to contact directly.

3.3.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) For materials of food contacting part, use all stainless steel or that having corrosion resistance equivalent thereto.
- (2) Set the electric motor, speed reducer, etc. at the food non-contacting part, take so sufficient distance as the foods not to contact directly and make such structure that it is able to clean sufficiently.
- (3) Set the electric operation apparatus at a place to be able to be cleaned easily.
- (4) Make the arm of feed vanes and shaft connecting part or seal part such structure that it is detachable easily and is able to be cleaned easily.
- (5) To the corner or edge inside of bowl, attach the roundness of 5 mm or more in radius so as the residue of raw material not to accumulate nor to adhere.

3.4 Noodle Band Making Machine

3.4.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Provide safety guard at the press-in apparatus and upper part of rotating roll, and make such structure, when the safety guard is detached for cleaning or washing, so as the roll and press-in apparatus to stop the running.

- (2) Make the structure such that in case where the safety guard does not start the function securely, the power does not actuate, and it is able to prevent the personal body from approaching to the rotating roll part and reciprocating motion arm part.
- (3) In the case of (2), make the structure such that the power once stopped, even though the safety guard is closed, if the switch is not operated newly, does not actuate again.
- (4) Attach the safety covers to the driving part and movable part so as the hand fingers or cloths of worker not to contact directly.
- (5) Attach the emergency stop button at the place nearest to the working range of worker.

3.4.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) As to the clearance of roll and frame, use a spattering preventive board of basic substrate made of synthetic resin.
- (2) As to the basic substrate press-in board and roll refuse removing board, use the material having the corrosion resistance.
- (3) Make the bearing part such structure that no oil leaks to intrude into the food contacting part.
- (4) Make the contact part of noodle basic substrate such structure that it is able to be cleaned securely and easily.
- (5) Set the electric motor, speed reducer, etc. at the food non-contacting part, take a sufficient distance so as the foods not to contact directly and make such structure that it is able to be cleaned sufficiently.

3.5 Composite Noodle Band Making Machine

3.5.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Provide the safety guard at the upper part of press-in apparatus and rotating roll, and make the structure such that in the case where the safety guard is detached for cleaning or washing, the limit switch actuates and the rolls and press-in apparatus stop the running.
- (2) Make the structure such that in the case where the safety guard does not start the function securely, the power is made not to actuate and during running it is able to prevent the personal body from approaching to rotating roll parts and reciprocating motion arm part.
- (3) In the case of (2), make the structure such that the power once stopped, even though the safety guard is closed, if the switch is not operated newly, does not actuate again.

- (4) Attach the safety cover to the driving part and movable part so as the hand fingers or cloths of worker not to contact directly.
- (5) Attach the emergency stop button at the place nearest to the working range of worker.
- (6) Provide the safety guard at the engaging part of rolls.

3.5.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) At the clearance of roll and frame, use a basic substrate spattering preventive board made of synthetic resin.
- (2) As to the basic substrate press-in board and roll refuse removing board, use materials having corrosion resistance.
- (3) Make the bearing part such structure that no oil leaks to intrude into the food contact part.
- (4) Make the contact part of noodle basic material such structure that it is able to be cleaned securely and easily.
- (5) Set the electric operating apparatus at a place capable of being cleaned easily.
- (6) As to the noodle band feed conveyor, use a belt of such material quality not to absorb the chemical characteristics of noodle raw material.
- (7) Make the structural members so as the hole or dent not to be caused and make the structure such as able to be cleaned securely and easily.
- (8) Set the electric motor, speed reducer, etc. at the food non-contacting part, take sufficient distance so as the foods not to contact directly and make the structure such that it is able to be cleaned sufficiently.

3.6 Continuous Rolling Machine

3.6.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Provide the safety cover or safety guard at the engaging part of rolls.
- (2) Attach the safety covers to the driving part and movable part so as the hand fingers or cloths of the worker not to contact directly.
- (3) Attach the emergency stop button at a place nearest to the working range of worker.

3.6.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) At the clearance of roll and frame, use the basic substrate spattering preventive board made of synthetic resin.
- (2) As to the roll-refuse removing board, use the material having corrosion resistance.
- (3) Make the bearing part such structure that oils do not leak and not to intrude into food contacting part.
- (4) Make the contact part of noodle basic substrate such structure that it is able to clean securely and easily.
- (5) Set the electrical operating apparatus at a place where it is able to be cleaned easily.
- (6) Make the inside of machine such structure that it is able to be cleaned easily and further the parts such as rolls can be detached simply to be able to be cleaned.
- (7) Set the electric motor, speed reducer, etc. at the food non-contacting part, take a sufficient distance so as the foods not to contact directly and make such structure as to be able to be cleaned sufficiently.

3.7 Regulating Quantity Cutting-out Machine

3.7.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Because, when taking out the noodle line cut by cutting edge, direct taking out just under the cutting edge is many in dangers, set a conveyer or chute plate just under the cutting edge to make the structure such that it is able to take out the noodle lines at a safe position without approaching of worker to dangerous place.
- (2) Set the transparent safety guard at the front surface of rotating blade which is inserted between the roll and the cutting edge, and make the structure such that the checking of rotation of rotating edge is able and further preventing the worker from approaching to dangerous place is possible.
- (3) Make the structure such that when the transparent safety guard is opened, the limit switch actuates and the power is stopped.
- (4) In the case of (3), make the structure such that the power once stopped, even though the safety guard is closed, if the return button is not operated newly, it does not actuate again.
- (5) Set the emergency stop switch at the place where the worker is able to reach rapidly and safely from the working position.

3.7.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) As to the clearance of roll and frame, use a basic substrate spattering preventive board made of synthetic resin.
- (2) As to the roll-refuse taking-out board, use the material having corrosion resistance.
- (3) Make the bearing part such structure that the oils do not leak so as not to intrude into food contact part.
- (4) Make the contact part of noodle basic substrate and of noodle line such structure that it is able to clean sufficiently and easily.
- (5) As to the noodle line feeding conveyer, use a belt of such material quality not to absorb the chemical characteristics of noodle raw materials.
- (6) Set the electric operating apparatus at a place where it is able to be cleaned easily.
- (7) Make the structural members of food contact part such that the hole or dent is not caused and it is able to be cleaned sufficiently and easily.
- (8) Set the electric motor, speed reducer, etc. at the food non-contacting part, take a sufficient distance so as the foods not to contact directly and make the structure such that it is able to be cleaned sufficiently.

3.8 Steaming Machine

3.8.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Attach to the transmission part and driving part the safety cover or safety guard so as the hand fingers or cloths of worker not to contact directly.
- (2) Make the operating board and appliances to be used for electrical system the drop preventive structure and, as required, the water proof structure.
- (3) Make the movable type safety guard such structure that the interlock guard system which interlocks with the electrical system or mechanical brake mechanism is employed.
- (4) For providing emergency time, set the emergency stop watches at two or more places where it is able to reach rapidly and safely from the working position.
- (5) Set the safety guard of fixing type at the feed-in part and feed-out part of net conveyer of a steaming tank.

- (6) Protect the high temperature part having a fear for worker or other persons to contact with a cover or shielding plate, or the like.

3.8.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) Make the carrier function part at the food contact part the corrosion preventive and rust preventive structure, and use for the material the stainless steel or that equivalent thereto in material quality.
- (2) Make the carrier function parts and chutes at the food contact part such structure that it is able to attach and detach easily and the pasteurization is possible.
- (3) Make the inside of steaming tank to be able to be cleaned easily, provide doors at several places of side surfaces of steaming tank and make such structure that it is able to be opened and closed by a simple operation.
- (4) Make the basket for washing with water and cooling such structure that it is able to be washed sufficiently at all times by using a shower apparatus.
- (5) Carry out the piping of feed pipe to feed raw steam into the tank for washing with water and cooling, and make the structure such that, even in the running, it is able to carry out the heat pasteurization of basket.
- (6) Make the bottom part inclination structure, so as no residual water to exist in the steaming tank at the time of cleaning or water exhausting and make the structure capable of water exhausting safely.
- (7) Attach the roundness to the angle corner part so as the refuse of noodle, water dirt, etc. not to accumulate at the part and make the structure such that it is able to be cleaned easily.

3.9 Boiling Machine

3.9.1 Safety Countermeasures The safety countermeasures shall be as follows:

- (1) Provide the safety cover or safety guard at the transmission part and driving part.
- (2) Make the operating board and appliances to be used in electrical system the drop-proof structure and, as required, make the water protective structure.
- (3) As to the safety guard of movable type, make such structure employed with the interlock guard system which interlocks with the electrical system or mechanical braking mechanism.

- (4) Set the emergency stop switches at two or more places where it is able to reach rapidly and safely from the working position.
- (5) Protect the high temperature part having a fear for the worker or other person to contact with the cover or shield, or the like.
- (6) Set an overflow apparatus to the boiling tank at a suitable position for preventing the overflow of hot water.
- (7) In the case of long boiling kettle, so as the hot water overflowed to the periphery of boiling tank not to give the worker the risk, attach a receiving trough of not less than 130 mm in width, 60 mm in depth at the periphery and make such structure to be able to exhaust the hot water to a safe portion.
- (8) When the boiling cage of reverse rotating type long boiling kettle to return in the hot water, so as not to be scattered the hot water by striking the hot water surface, for returning into the hot water gently, set a buffer motion apparatus.
- (9) In the case of direct fire type, make the structure capable of ventilating sufficiently by providing completely the flue and chimney by building a furnace by using refractory bricks.
- (10) As to the direct fire type burner, set a fire sensitive safety apparatus which acts instantaneously, to make the structure such that when the burner is of incomplete fire catching, it shuts off the feed of fuel automatically.

3.9.2 Sanitation Countermeasures The sanitation countermeasures shall be as follows:

- (1) Make the carrier function parts at the food contact part the corrosion proof and rust proof structure and for material use the stainless steel.
- (2) Make the carrier function parts, chute, water receiving dish, etc. at the food contacting parts such structure that these are able to be attached and detached simply and cleaning and pasteurization are capable.
- (3) Make the basket for washing with water and cooling tank such structure that even in the running, it is able to be washed at all times by means of shower apparatus, and as far as possible, provide pasteurization tank to make such structure that, even in the working, it is able to pasteurize the basket by hot water.
- (4) Make the structure capable of exhausting water completely by making the bottom part inclination structure so as the water not to remain in the tank at the time of cleaning or water exhausting.

Further, in the case of long tank, attach exhaust water grooves at two or more places.

- (5) Attach the rounding at the corner of tank so as the dust, water refuse, etc. not to accumulate to make the structure capable of cleaning easily.
- (6) At the upper part of the tank for washing with water and cooling, in order to prevent the mixing-in of foreign matters from ceiling, attach a ceiling cover.
- (7) In the case of reverse rotating type, in order to be able to wash completely the inside of tank, make the structure such that the boiling cage is able to be detached simply.

B 9656-1990
Edition 1

Japanese Text

Established by Minister of International Trade and Industry

Date of Establishment: 1990-07-01

Date of Public Notice in Official Gazette: 1990-07-17

Investigated by: Japanese Industrial Standards Committee

Divisional Council on General Machinery

This English translation is published by:
Japanese Standards Association
1-24, Akasaka 4, Minato-ku,
Tokyo 107 Japan
© JSA, 1991

Printed in Tokyo by
Hohbunsha Co., Ltd.